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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 2000-CE-45-AD; Amendment 39-13313; AD 2003-19-10]

RIN 2120-AA64

Airworthiness Directives; Fairchild Aircraft, Inc., SA226 Series and SA227 Series Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This amendment adopts a new airworthiness directive (AD) that applies to all Fairchild Aircraft, Inc. (Fairchild Aircraft) SA226 and SA227 series airplanes. This AD requires you to inspect the fuel boost pump wiring for any chafing, cracked insulation material, or evidence of bare wire(s) (referred to herein as damage), and replace any damaged wiring. This AD also requires you to install protective tubing around the fuel boost pump wiring harness. This AD is the result of reports of chafed fuel boost pump wiring to either the inboard or outboard boost pump wiring. The actions specified by this AD are intended to prevent the fuel boost pump wiring from chafing, which could result in electrical arcing. This could serve as an ignition source inside the fuel tank and result in fire or explosion.

DATES: This AD becomes effective on November 7, 2003.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in the regulations as of November 7, 2003.

ADDRESSES: You may get the service information referenced in this AD from Fairchild Aircraft, Inc., P.O. Box 790490, San Antonio, Texas 78279-0490; telephone: (210) 824-9421; facsimile: (210) 820-8609. You may view this information at the Federal Aviation Administration (FAA), Central Region, Office of the Regional Counsel, Attention: Rules Docket No. 2000-CE-45-AD, 901 Locust, Room 506, Kansas City, Missouri 64106; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

FOR FURTHER INFORMATION CONTACT: Ingrid Knox, Aerospace Engineer, FAA, Airplane Certification Office, 2601 Meacham Boulevard, Fort Worth, Texas 76193-0150; telephone: (817) 222-5139; facsimile: (817) 222-5960.

SUPPLEMENTARY INFORMATION:

Discussion

What Events Have Caused This AD?

The FAA has received reports indicating problems with 6 Fairchild Aircraft SA227-AC airplanes. Evidence of chafing to either the inboard or outboard fuel boost pump wiring has been found on all 6 airplanes. In one case, evidence of arcing between the chafed wiring and the fuel check valve was found.

All airplane models within the Fairchild Aircraft SA226 and SA227 series incorporate this fuel boost pump wiring design.

What Is the Potential Impact if FAA Took No Action?

Damage to the fuel boost pump wiring, if not detected and corrected, could result in electrical arcing. This could serve as an ignition source inside the fuel tank and result in fire or explosion.

Has FAA Taken Any Action to This Point?

We issued a proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) to include an AD that would apply to all Fairchild Aircraft SA226 and SA227 series airplanes. This proposal was published in the Federal Register as a notice of proposed rulemaking (NPRM) on October 15, 2002, 67 FR 63573. The NPRM proposed to require you to inspect the fuel boost pump wiring for any chafing, cracked insulation material, or evidence of bare wire(s) (referred to herein as damage), and replace any damaged wiring. The NPRM also proposed to require you to install protective tubing around the fuel boost pump wiring harness.

Was the Public Invited To Comment?

The FAA encouraged interested persons to participate in the making of this amendment. The following presents the comments received on the proposal and FAA's response to each comment:

Comment Issue No. 1: Change the Compliance Times for Performing the Inspections

What Is the Commenter's Concern?

The commenter states that through a check of in-house maintenance and inspection personnel data records on the company's fleet of 15 airplanes, no instances of fuel boost pump wire chafing were found. The airplanes in this fleet have flying times ranging from 13,925 hours time-in-service (TIS) to 25,815 hours TIS. The commenter suggests that the unsafe condition is isolated to one location or area where there is a problem with incorrect installation of the fuel boost pumps. The commenter also states that the unsafe condition may also be an issue related to a specific threshold of hours TIS.

The commenter states that because of the high usage time of his fleet, in conjunction with other scheduled and unscheduled maintenance, there may be a negative impact on his fleet's flight schedule.

The commenter requests the compliance times be changed from within the next 3 months or 600 hours TIS, whichever occurs first, to 6 months or 1,200 hours TIS, whichever occurs first. The commenter justifies this request by referencing the date of the associated manufacturer's service letters.

What Is FAA's Response to the Concern?

We do not concur with the commenter. We have determined from testing and service data obtained from the manufacturer that the unsafe condition exists in low-time and high-time usage airplanes.

We have determined that 3 months or 600 hours TIS, whichever occurs first, is sufficient time to work the inspection into the owners/operators inspection program. As with any AD action, we will consider compliance time extensions provided they provide an acceptable level of safety and are submitted through the alternative method of compliance procedures specified in the AD.

We are not changing the final rule AD action based on this comment.

Comment Issue No. 2: Revise the Cost Impact Section

What Is the Commenter's Concern?

The commenter does not believe that FAA's estimate of the number of workhours necessary to accomplish the actions proposed in the NPRM is correct. The commenter does not provide a suggested number of workhours with substantiating information.

What Is FAA's Response to the Concern?

We do not concur. We have coordinated all costs with Fairchild Aircraft, Inc.

We are not changing the final rule AD action based on this comment.

Comment Issue No. 3: Give Credit for Previously Accomplishing the Actions Required in the Associated Manufacturer's Service Letters

What Is the Commenter's Concern?

The commenter states that FAA should make a provision for airplanes already in compliance with the associated manufacturer's service letters.

What Is FAA's Response to the Concern?

The FAA agrees and we are changing the final rule AD to provide for airplanes that already meet the requirements of the service letters.

FAA's Determination

What Is FAA's Final Determination on This Issue?

After careful review of all available information related to the subject presented above, we have determined that air safety and the public interest require the adoption of the rule as proposed except for the change described in the above comment disposition and minor editorial corrections. We have determined that this change and minor corrections:

- Provide the intent that was proposed in the NPRM for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM.

How Does the Revision to 14 CFR Part 39 Affect This AD?

On July 10, 2002, FAA published a new version of 14 CFR part 39 (67 FR 47997, July 22, 2002), which governs FAA's AD system. This regulation now includes material that relates to special flight permits, alternative methods of compliance, and altered products. This material previously was included in each individual AD. Since this material is included in 14 CFR part 39, we will not include it in future AD actions.

Cost Impact

How Many Airplanes Does This AD Impact?

We estimate that this AD affects 490 airplanes in the U.S. registry.

What Is the Cost Impact of This AD on Owners/Operators of the Affected Airplanes?

We estimate the following costs to accomplish the inspection of the fuel boost pump wiring:

Labor cost	Parts cost	Total cost per airplane	Total cost on U.S. operators
2 workhours x \$60 per hour = \$120	\$96	\$120 + \$96 = \$216	\$216 x 490 = \$105,840

We estimate the following costs to accomplish the installation of the convoluted tubing:

Labor cost	Parts cost	Total cost per airplane	Total cost on U.S. operators
1 workhour x \$60 per hour = \$60	\$48	\$60 + \$48 = \$108	\$108 x 490 = \$52,920

The FAA has no method of determining the number of repairs or replacements each owner/operator will incur based on the results of the inspection. We have no way of determining the number of airplanes that may need such repair. The extent of damage may vary on each airplane.

Compliance Time of This AD

What Is the Compliance Time of This AD?

The compliance time of this AD is whichever of the following that occurs first:

- Within the next 3 months after the effective date of this AD; or
- Within the next 600 hours time-in-service (TIS) after the effective date of this AD.

Why Is the Compliance Time of This AD Presented in Both Hours TIS and Calendar Time?

Chafing damage is a direct result of airplane usage. However, chafing damage is not necessarily a result of repetitive airplane operation. For example, damage could occur on an affected airplane within a short period of airplane operation while you could operate another affected airplane for a considerable amount of time without experiencing wiring damage. Therefore, to assure that any damaged wiring is detected and corrected in a timely manner without inadvertently grounding any of the affected airplanes, we are utilizing a compliance based upon both hours TIS and calendar time.

Regulatory Impact

Does This AD Impact Various Entities?

The regulations adopted herein will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, it is determined that this final rule does not have federalism implications under Executive Order 13132.

Does This AD Involve a Significant Rule or Regulatory Action?

For the reasons discussed above, I certify that this action (1) is not a "significant regulatory action" under Executive Order 12866; (2) is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and (3) will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act. A copy of the final evaluation prepared for this action is contained in the Rules Docket. A copy of it may be obtained by contacting the Rules Docket at the location provided under the caption ADDRESSES.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, under the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (14 CFR part 39) as follows:

PART 39—AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. FAA amends § 39.13 by adding a new AD to read as follows:

AIRWORTHINESS DIRECTIVE



Aircraft Certification Service
Washington, DC

U.S. Department
of Transportation
**Federal Aviation
Administration**

We post ADs on the internet at "www.faa.gov"

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

2003-19-10 Fairchild Aircraft, Inc.: Amendment 39-13313; Docket No. 2000-CE-45-AD.

(a) *What airplanes are affected by this AD?* This AD affects the following airplane models, all serial numbers, that are certificated in any category: SA226-AT, SA226-T, SA226-T(B), SA226-TC, SA227-AC (C-26A), SA227-AT, SA227-BC (C-26A), SA227-CC, SA227-DC(C-26B), SA227-PC, and SA227-TT.

(b) *Who must comply with this AD?* Anyone who wishes to operate any of the airplanes identified in paragraph (a) of this AD must comply with this AD.

(c) *What problem does this AD address?* The actions specified by this AD are intended to prevent the fuel boost pump wiring from chafing, which could result in electrical arcing. This could serve as an ignition source inside the fuel tank and result in fire or explosion.

(d) *What actions must I accomplish to address this problem?* To address this problem, you must accomplish the following, unless already accomplished:

Actions	Compliance	Procedures
(1) Visually inspect the left-hand and right-hand main/auxiliary fuel boost pump wiring for evidence of chafing, damage, or exposed bare wire(s).	Within the next 3 months or within the next 600 hours time-in-service (TIS) after November 7, 2003 (the effective date of this AD), whichever occurs first, unless already accomplished.	Accomplish the inspection in accordance with the Accomplishment Instructions in Fairchild Service Letter 226-SL-023 or Fairchild Service Letter 227-SL-039, both dated September 6, 2000; or Fairchild Service Letter CC7-SL-031, pages 1 and 3 dated September 6, 2000, and page 2 dated September 25, 2000, as applicable.
(2) Replace any chafed, damaged or exposed bare wire(s).	Prior to further flight after the inspection required in paragraph (d)(1) of this AD, unless already accomplished.	Accomplish replacement(s) in accordance with the applicable wiring manual as specified in the applicable Fairchild Service Letter.
(3) Install HEYCO-FLEX V, Slit Convuluted Tubing, part-number (P/N) 1634, around each fuel boost pump wiring harness.	Prior to further flight after the inspection required in paragraph (d)(1) of this AD, unless already accomplished.	Accomplish the installation in accordance with the Accomplishment Instructions in Fairchild Service Letter 226-SL-023 or Fairchild Service Letter 227-SL-039, both dated September 6, 2000; or Fairchild Service Letter CC7-SL-031, pages 1 and 3 dated September 6, 2000, and page 2 dated September 25, 2000, as applicable.

(e) *Can I comply with this AD in any other way?* To use an alternative method of compliance or adjust the compliance time, use the procedures in 14 CFR 39.19. Send these requests to the Manager, Fort Worth Airplane Certification Office (ACO). For information on any already approved alternative methods of compliance, contact Ingrid Knox, Aerospace Engineer, FAA, Airplane Certification Office, 2601 Meacham Boulevard, Fort Worth, Texas 76193-0150; telephone: (817) 222-5139; facsimile: (817) 222-5960.

(f) *Are any service bulletins incorporated into this AD by reference?* Actions required by this AD must be done in accordance with Fairchild Service Letter 226-SL-023 or Fairchild Service Letter 227-SL-039, both dated September 6, 2000; or Fairchild Service Letter CC7-SL-031, pages 1 and 3 dated September 6, 2000, and page 2 dated September 25, 2000. The Director of the Federal Register approved this incorporation by reference under 5 U.S.C. 552(a) and 1 CFR part 51. You may get copies from Fairchild Aircraft, Inc., P.O. Box 790490, San Antonio, Texas 78279-0490.

You may view copies at the FAA, Central Region, Office of the Regional Counsel, 901 Locust, Room 506, Kansas City, Missouri, or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

(g) *When does this amendment become effective?* This amendment becomes effective on November 7, 2003.

Issued in Kansas City, Missouri, on September 15, 2003.
Michael Gallagher,
Manager, Small Airplane Directorate, Aircraft Certification Service.
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